Course Policy

Department	Information Technology
Faculty	Computer Science
Course Code	
Course Title	System Networking
Credit hour	3
Pre-Requisite	Data Comm and Computer Networking
Course Instructor	Baitullah Malakhil
Text Book	MCSA Windows Server 2012 Complete Study Guide: Exams 70-410, 70-411, 70-412
Reference Book	MCSA Windows Server 2012 Complete Study Guide: Exams 70-410, 70-411, 70-412

1. Course Description:

The System Networking course is introduced to equip students with the knowledge of System Administration. We will implement this course using the Microsoft Server 2012 R2 which is the latest version of server in Microsoft platform. This course will include the main contents of Microsoft MCSE course which includes the following topics:

- AD DS Configuration and Administration
- AD Backup and Restoration
- DHCP & DNS Server Configuration and Administration
- File Server, FTP Server, DFS & Print Server installation and Configurations
- VPN Configuration …etc.

2. Course Learning Objectives (CLO):

1. Knowledge of workgroup and domain-based network alongside the differences between them.
2. Knowledge and skills of Microsoft Active Directory and user/group account management
3. Installation and Configuration of DHCP, DNS, and GPO in Microsoft Windows Server 2012 R2/2016.
4. Back up and restoration of AD objects.
5. VPN installation and configuration in Server 2016.
6. Additional domain controller and Read-Only Domain Controller (RODC).

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7. FTP and File Server installation and configuration
8. NIC teaming and delegation of control.

3. Learning Domain:

- Cognitive (knowledge)
- Affective (Attitude)
- Psychomotor (Physical or Manual skills)

Only cognitive domain is used for this course while the rest two cannot applied here

4. Course Learning Objectives Mapping with Bloom Taxonomy:

1) Remembering
2) Understanding
3) Applying
4) Analyzing
5) Evaluating
6) Creating

COLs	1	2	3	4	5	6
CLO1	True	True	True			
CLO2		True	True			
CLO3	True	True	True			
CLO4	True	True	True			
CLO5		True	True			
CLO6		True	True			
CLO7		True	True			
CLO8		True	True			

5. Course Teaching Methods

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1	Lecture
2	Problem solving Learning
3	Interactive Learning
4	Practical sessions

6. Grading Scheme

Mid Term	20%
Assignments	10%
Quiz	10%
Final Term	60%

7. Weekly Course Breakdown:

Week	Topic	Objectives	Activities	Assessment	
1	Introduction of the course: - Introduction to the course - Introduction to network & internetwork - Introduction to Server 2012: - Hardware requirements - Editions - New features - Windows Server 2012 R2 Installation	-Understanding the course outline and objectives -Introduction of Microsoft Server 2012/2016 OS	-Q&A session with students	Oral assessment at class	
2	**Introduction to Active Directory** - Introduction to Active Directory - DNS - Domain	- Introduction of AD and other related concepts in Windows Server OS	-Q&A session with students	Oral assessment at class	

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	- Domain Controller - User accounts, Group Accounts & OUs - Local and domain users				
3	**AD installation, configuration and Users, Groups & OU management :** - AD requirements - AD & DNS Installation - Creating AD Objects ▪ Users ▪ Groups ▪ OUs	-AD requirements, installation, configuration and users/groups management	Practical session with students	Oral assessment at class	
4	**Joining Clients to Domain & Managing AD objects using Windows PowerShell** - Joining a client to the domain - Remote Desktop connection - Introduction to Windows Power Shell - Difference between Power Shell & Power Shell ISE - Managing AD objects using Power Shell - **COMPUTER LAB (STUDENTS PRACTICE)**	-Server and Client environment formation - Practical and theoretical skills and knowledge windows PowerShell	Practical session with students	Oral assessment at class	
5	**Managing GPOs:** - Introduction to GPO - Local and domain group policies - Working with the following GPO: o Prevent Access to control panel	-Group Policy management and restricting of the access of clients to shared resources	Practical session with students	Oral assessment at class	

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	o Deny removable storage o Desktop wallpaper o Deny changing desktop wallpaper o Allow logon locally - Default domain policies - Domain Controllers policies - **COMPUTER LAB (STUDENTS PRACTICE)**				
6	**DCHP Server installation & configuration:** - Introduction to DHCP - Static and Dynamic IP configuration - Benefits of DHCP - DORA Process & DHCP Scope - DHCP Lease duration - DHCP Reservation - DHCP authorization - DHCP Scope activation - DHCP installation and configuration - **COMPUTER LAB (STUDENTS PRACTICE)**	-Understanding DHCP and how it works -Installation and configuration of DHCP	Theoretical and Practical session with students	Oral assessment at class	
7	**File Server & DFS configuration along with NTFS permissions:** - Introduction to file server - NTFS Permissions - Shared Level Permissions - Basic data sharing	-Understanding how file server and DFS works -Installation and configuration of DFS	-Practical session with students	Oral assessment at class	

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	- Mapping Network drive manually - DFS - Mapping Network Drive using GPO - DFS Installation and configuration - **COMPUTER LAB (STUDENTS PRACTICE)**				
8	**Remote Software installation using GPO & Print Server configuration** - Remote software installation - Software installation using GPO - Print server - Local and network printer - Print server configuration - Printer permissions - **COMPUTER LAB (STUDENTS PRACTICE)**	-Software installation using GPO -Printer server configuration	-Practical session with students	Oral assessment at class	
9	**DNS Server (Theory)** - Introduction to DNS - DNS Components - DNS Namespace - DNS Query a. Recursive query b. Iterative query - DNS forwarders a. Standard forwarder b. Conditional forwarder - DNS cache - DNS Zones	-Understanding the concept of DNS -How DNS works	Lecture session	Oral assessment at class	

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	a. Forward lookup zone b. Reverse lookup zone - DNS Zone transfer - Other zone types - DNS database (DNS records)				
10	**DNS Server installation, configuration & DNS zone transfer** - DNS Installation - DNS Configuration - Configuration of DNS Forwarders - Creating DNS Zones - Secondary DNS Server and DNS zone transfer - **COMPUTER LAB (STUDENTS PRACTICE)**	--Working with DNS; installation and configuration	-Practical session with students	Oral assessment at class	
11	**Windows Server 2012 Backup & AD backup** - Windows server backup - WBAdmin backup - NTDSUtil backup - Windows server back installation and backing up data and AD database	-Understanding AD backup -Backing up AD files	-Theoretical and Practical session with students	Oral assessment at class	
12	**AD restoration** - AD restoration - Non-Authoritative restoration - Authoritative restoration - USN Number - **COMPUTER LAB (STUDENTS PRACTICE)**	-Restoring AD files	-Practical session with students	Oral assessment at class	

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13	**FTP server installation & configuration** - Introduction to FTP Server - Installation of FTP Server - Configuration of FTP Server - User account and Password policies - Configuration of user account and password policies **- COMPUTER LAB (STUDENTS PRACTICE)**	-Understanding the concept of FTP -Working with FTP	-Theoretical and Practical session with students	Oral assessment at class	
14	**VPN Server & Delegation of Control:** - Introduction to VPN - VPN requirements - Remote Access Installation - VPN Configuration - Delegation of control **-** AD Permissions **- COMPUTER LAB (STUDENTS PRACTICE)**	-Understanding the concept of VPN -Working with VPN	-Theoretical and Practical session with students	Oral assessment at class	
15	**NIC Teaming & RODC configuration:** - Introduction to RODC - RODC application - RODC installation **-** RODC Configuration **-** NIC teaming **- COMPUTER LAB (STUDENTS**	-RODC configuration -setting up NIC teaming for high reliability and speed	-Theoretical and Practical session with students	Oral assessment at class	

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	PRACTICE)				
16	**Overall Review & Quiz:** - Overall review of the lectures - QUIZ	-Revision	Discussion with students	Oral assessment at class	